

1. Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Simple Calculator</title>
  <script type="text/javascript">
    var op1= 0,op2= 0,operator="",res="",from="";
    function reset()
    {
      document.getElementById('res').value = "";
      op1=0;op2=0;operator="";res="";from="";
    }

    function insertOperand(operand)
    {
      if(from == "calculate")
        reset();
      else if(from == "operator")
        document.getElementById('res').value = "";
      document.getElementById('res').value+=operand;
      from = "operand";
    }

    function insertOperator(op)
    {
      if(op1 == 0)
      {
        op1=document.getElementById('res').value;
      }
      else
      {
        if(from == "operand")
        {
          calculate();
        }
      }
      operator=op;
      from="operator";
    }

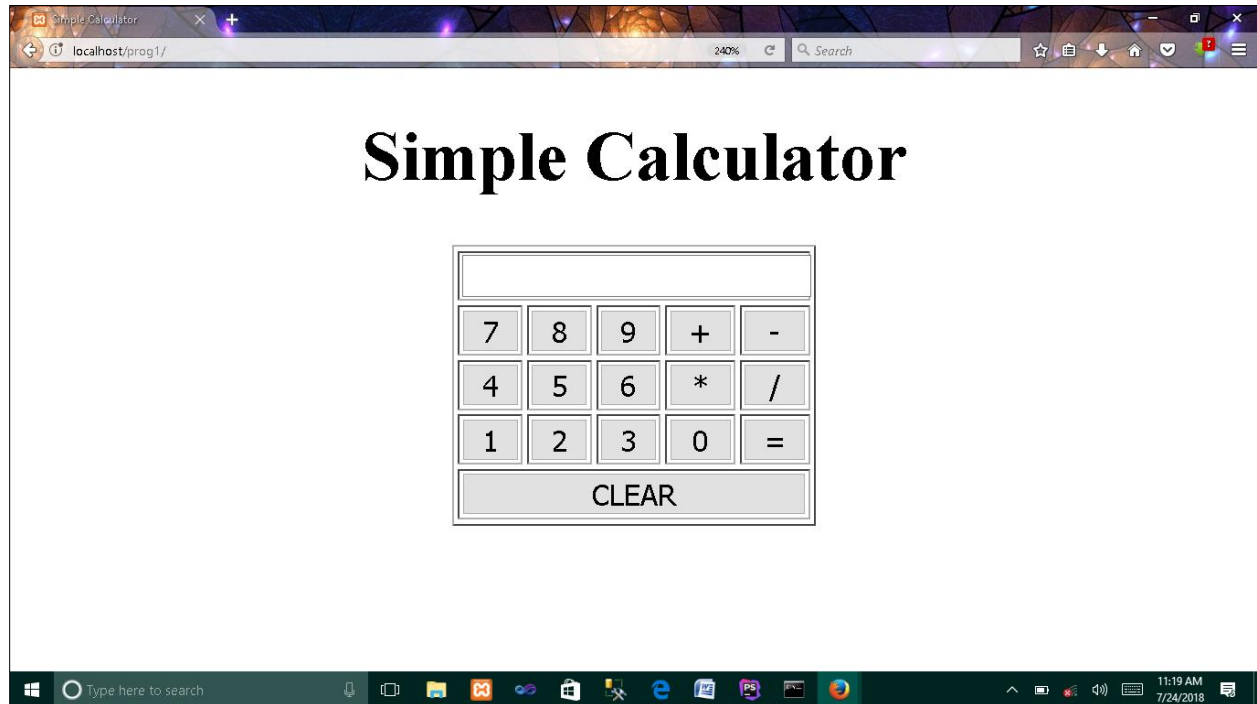
    function calculate()
    {
      op2=document.getElementById('res').value;
      op1=parseInt(op1);
      op2=parseInt(op2);
      switch (operator)
      {
        case '+':res=op1+op2;
          break;
        case '-':res=op1-op2;
          break;
        case '*':res=op1*op2;
          break;
```

```

        case '/':
            if(op2 == 0)
                res=0;
            else
                res=parseInt(op1/op2);
            break;
    }
    document.getElementById('res').value=res;
    op1=res;
    op2=0;
    operator="";
    from="calculate";
}
</script>
<style type="text/css">
    input {width: 100%}
    h1 {text-align: center}
</style>
</head>
<body onload="reset()">
    <h1>Simple Calculator</h1>
    <table align="center" border="1">
        <tr>
            <td colspan="5"><input type="text" id="res" name="res" value="" /></td>
        </tr>
        <tr>
            <td><input type="button" value="7" onclick="insertOperand('7')"/></td>
            <td><input type="button" value="8" onclick="insertOperand('8')"/></td>
            <td><input type="button" value="9" onclick="insertOperand('9')"/></td>
            <td><input type="button" value="+" onclick="insertOperator('+')"/></td>
            <td><input type="button" value="-" onclick="insertOperator('-')"/></td>
        </tr>
        <tr>
            <td><input type="button" value="4" onclick="insertOperand('4')"/></td>
            <td><input type="button" value="5" onclick="insertOperand('5')"/></td>
            <td><input type="button" value="6" onclick="insertOperand('6')"/></td>
            <td><input type="button" value="*" onclick="insertOperator('*')"/></td>
            <td><input type="button" value="/" onclick="insertOperator('/')"/></td>
        </tr>
        <tr>
            <td><input type="button" value="1" onclick="insertOperand('1')"/></td>
            <td><input type="button" value="2" onclick="insertOperand('2')"/></td>
            <td><input type="button" value="3" onclick="insertOperand('3')"/></td>
            <td><input type="button" value="0" onclick="insertOperand('0')"/></td>
            <td><input type="button" value="=" onclick="calculate()"/></td>
        </tr>
        <tr>
            <td colspan="5"><input type="button" size="100%" value="CLEAR"
                onclick="reset()"/></td>
        </tr>
    </table>
</body>
</html>

```

Output :

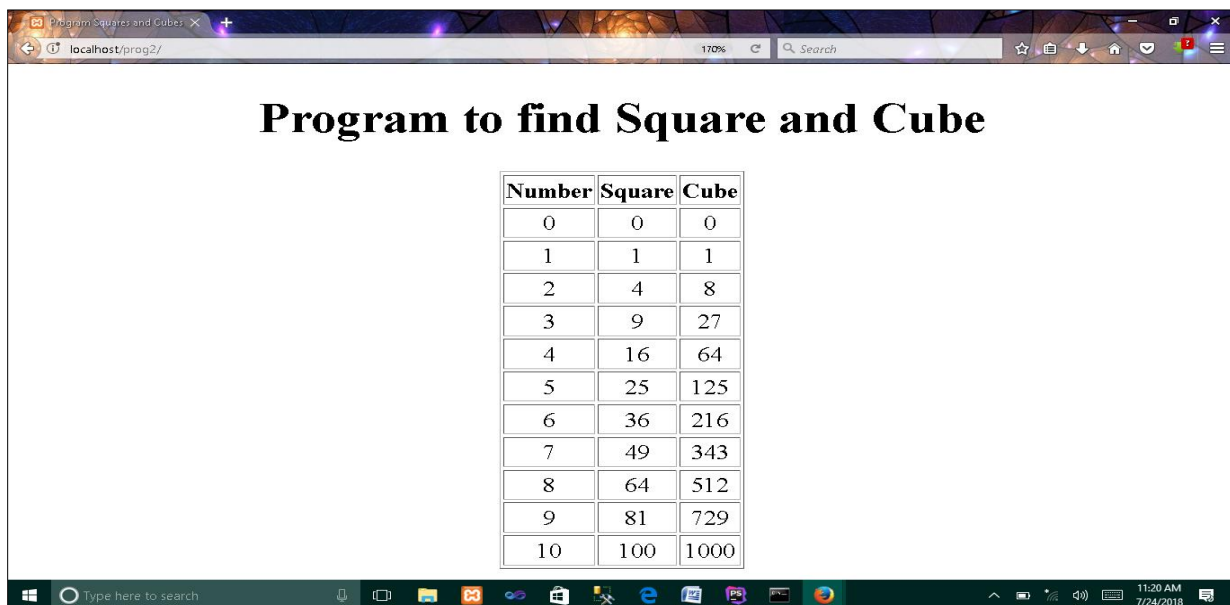


2. Write a JavaScript that calculates the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Program for Squares and Cubes</title>
  <style type="text/css">
    table,h1 {text-align: center}
  </style>
</head>
<body>
<h1>Program to find Square and Cube</h1>
<script type="text/javascript">
  var mytable="<table border='1' align='center'> <tr> <th>Number</th>
    <th>Square</th> <th>Cube</th> </tr>";
  var square= 0,cube=0;
  for(var i=0;i<=10;i++)
  {
    square=i*i;
    cube=i*i*i;
    mytable+="<tr><td>" +i+"</td><td>" +square+"</td>
      <td>" +cube+"</td></tr>"
  }
  mytable+="</table>";
  document.write(mytable);
</script>
</body>
</html>
```

Output :



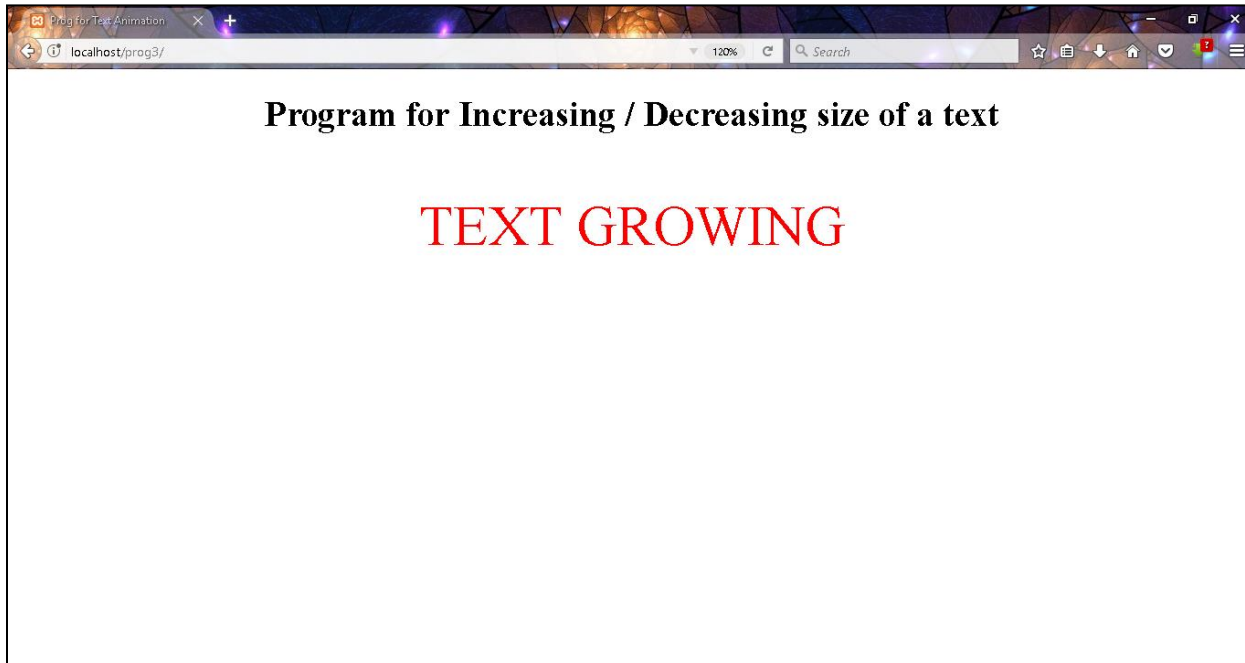
Number	Square	Cube
0	0	0
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125
6	36	216
7	49	343
8	64	512
9	81	729
10	100	1000

3. Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT-SHRINKING" in BLUE color. Then the font size decreases to 5pt.

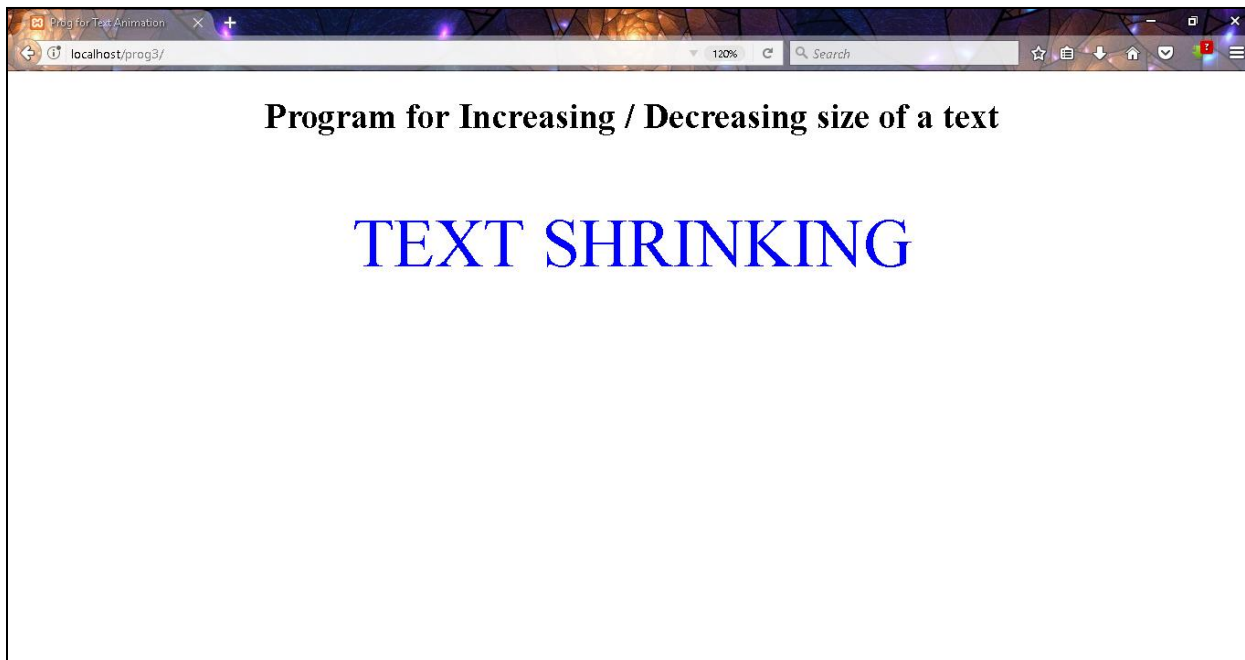
index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Prog for Text Animation</title>
  <script type="text/javascript">
    function animate()
    {
      var val=window.getComputedStyle(document.getElementById('text')).fontSize;
      var fontsize=parseInt(val);
      var state="growing";
      var timer=setInterval(textanimate,100);
      function textanimate()
      {
        if(state=="growing")
        {
          fontsize++;
          document.getElementById('text').innerHTML="TEXT GROWING";
          document.getElementById('text').style.color="red";
          document.getElementById('text').style.fontSize=fontsize+"pt";
        }
        if(state=="shrinking")
        {
          fontsize--;
          document.getElementById('text').innerHTML="TEXT SHRINKING";
          document.getElementById('text').style.color="blue";
          document.getElementById('text').style.fontSize=fontsize+"pt";
        }
        if(fontsize==50)
        {
          state="shrinking"
        }
        if(fontsize==5)
        {
          clearInterval(timer);
        }
      }
    }
  </script>
</head>
<body onload="animate()">
  <h1 style="text-align: center">
    Program for Increasing / Decreasing size of a text
  </h1>
  <p style="text-align: center;" id="text"></p>
</body>
</html>
```

Output :



(a) Animation for text growing



(b) Animation for text shrinking

4. Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems:

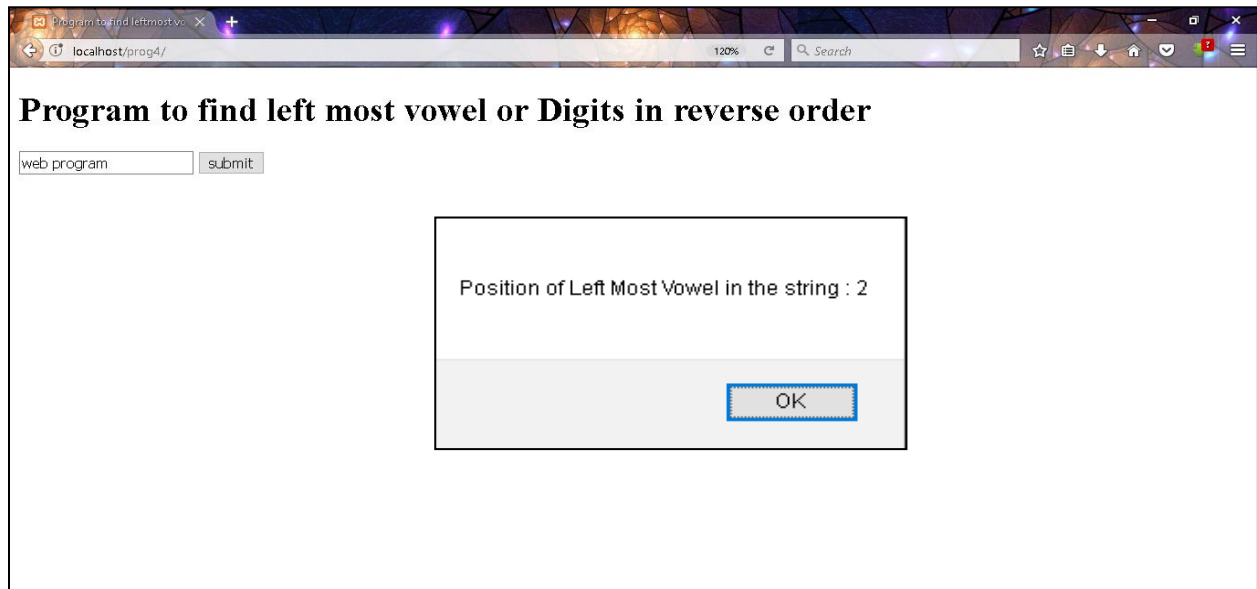
- a. Parameter: A string
- b. Output: The position in the string of the left-most vowel
- c. Parameter: A number
- d. Output: The number with its digits in the reverse order

index.html

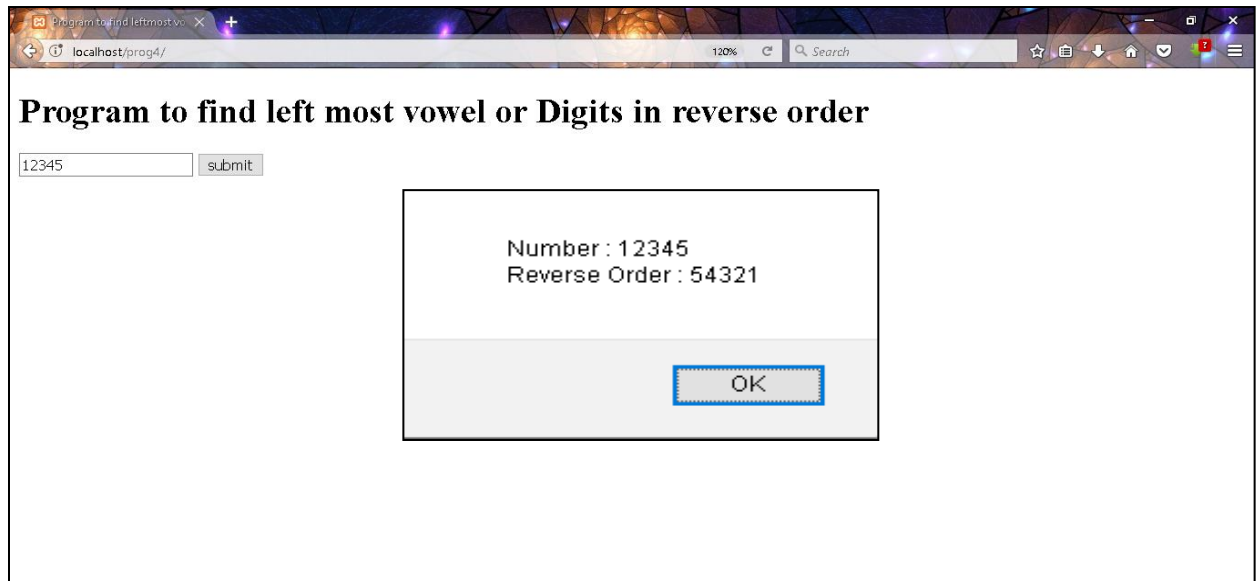
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Program to find leftmost vowel and digits in reverse order</title>
  <script type="text/javascript">
    function validate()
    {
      var inp=document.getElementById('val').value;
      if(isNaN(inp))
        findVowel(inp);
      else
        findReverse(inp);
    }
    function findVowel(inp)
    {
      var str=inp.toLowerCase();
      var pos=0,ch="";
      for(var i=0;i<str.length;i++)
      {
        ch=str.charAt(i);
        if(ch=="a" || ch=="e" || ch=="i" || ch=="o" || ch=="u")
        {
          pos=i+1;
          break;
        }
      }
      if(pos==0)
        alert("Vowel not found");
      else
        alert("Position of Left Most Vowel in the string : "+pos);
    }
    function findReverse(inp)
    {
      var num=parseInt(inp);
      var temp=num;
      var rem=0,rev=0;
      while(num>0)
      {
        rem=num%10;
        rev=rev*10+rem;
        num=parseInt(num/10);
      }
      alert("Number : "+temp+"\nReverse Order : "+rev);
    }
  </script>
</head>
```

```
<body>
  <h1>
    Program to find left most vowel or Digits in reverse order
  </h1>
  <input type="text" name="val" id="val" placeholder="Enter String or Digits">
  <input type="button" value="submit" onclick="validate()">
</body>
</html>
```

Output :



(a) When you enter the string as input



(b) When you enter the digits as input

5. Design an XML document to store information about a student in an engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Branch, Year of Joining, and email id. Make up sample data for 3 students. Create a CSS style sheet and use it to display the document.

5.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="5.css"?>
<!DOCTYPE student [
    <!ELEMENT student_info (h1,h2+,ad+)>
    <!ELEMENT ad (label)>
    <!ELEMENT usn (#PCDATA)>
    <!ELEMENT name (#PCDATA)>
    <!ELEMENT col (#PCDATA)>
    <!ELEMENT branch (#PCDATA)>
    <!ELEMENT year (#PCDATA)>
    <!ELEMENT email (#PCDATA)>
    <!ELEMENT label (#PCDATA|usn|name|col|branch|year|email)*>
    <!ELEMENT h2 (#PCDATA)>
    <!ELEMENT h1 (#PCDATA)>]>

<student_info>
    <h1>Student information</h1>

    <h2>Student1</h2>
    <ad><label>USN:<usn>4SH11CS001</usn></label></ad>
    <ad><label>NAME:<name>AAA</name></label></ad>
    <ad><label>COLLEGE:<col>SDIT</col></label></ad>
    <ad><label>BRANCH:<branch>CSE</branch></label></ad>
    <ad><label>YEAR:<year>2011</year></label></ad>
    <ad><label>EMAIL:<email>abc@gmail.com</email></label></ad>

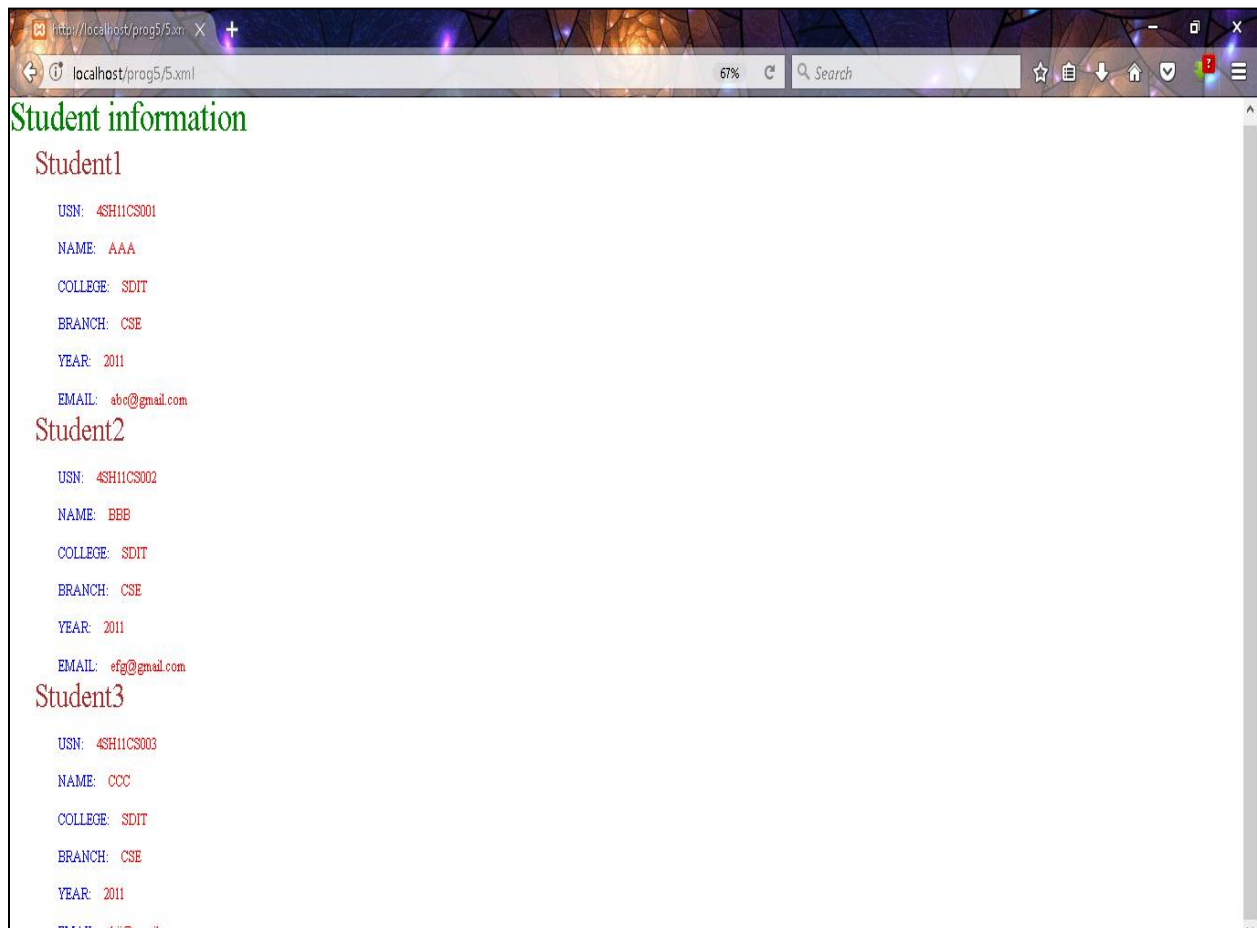
    <h2>Student2</h2>
    <ad><label>USN:<usn>4SH11IS002</usn></label></ad>
    <ad><label>NAME:<name>BBB</name></label></ad>
    <ad><label>COLLEGE:<col>SDIT</col></label></ad>
    <ad><label>BRANCH:<branch>ISE</branch></label></ad>
    <ad><label>YEAR:<year>2012</year></label></ad>
    <ad><label>EMAIL:<email>efg@gmail.com</email></label></ad>

    <h2>Student3</h2>
    <ad><label>USN:<usn>4SH11CS003</usn></label></ad>
    <ad><label>NAME:<name>CCC</name></label></ad>
    <ad><label>COLLEGE:<col>SDIT</col></label></ad>
    <ad><label>BRANCH:<branch>CSE</branch></label></ad>
    <ad><label>YEAR:<year>2013</year></label></ad>
    <ad><label>EMAIL:<email>hij@gmail.com</email></label></ad>
</student_info>
```

5.css

```
h1 {color:green;font-size:50px;}
h2 {display:block;margin-left:40px;color:brown;font-size:40px;}
ad {display:block;margin-left:80px;margin-top:20px;color:blue;font-size:20px;}
usn {color:red;margin-left:20px;font-size:20px;}
name {color:red;margin-left:20px;font-size:20px;}
col {color:red;margin-left:20px;font-size:20px;}
branch {color:red;margin-left:20px;font-size:20px;}
year {color:red;margin-left:20px;font-size:20px;}
email {color:red;margin-left:20px;font-size:20px;}
```

Output :



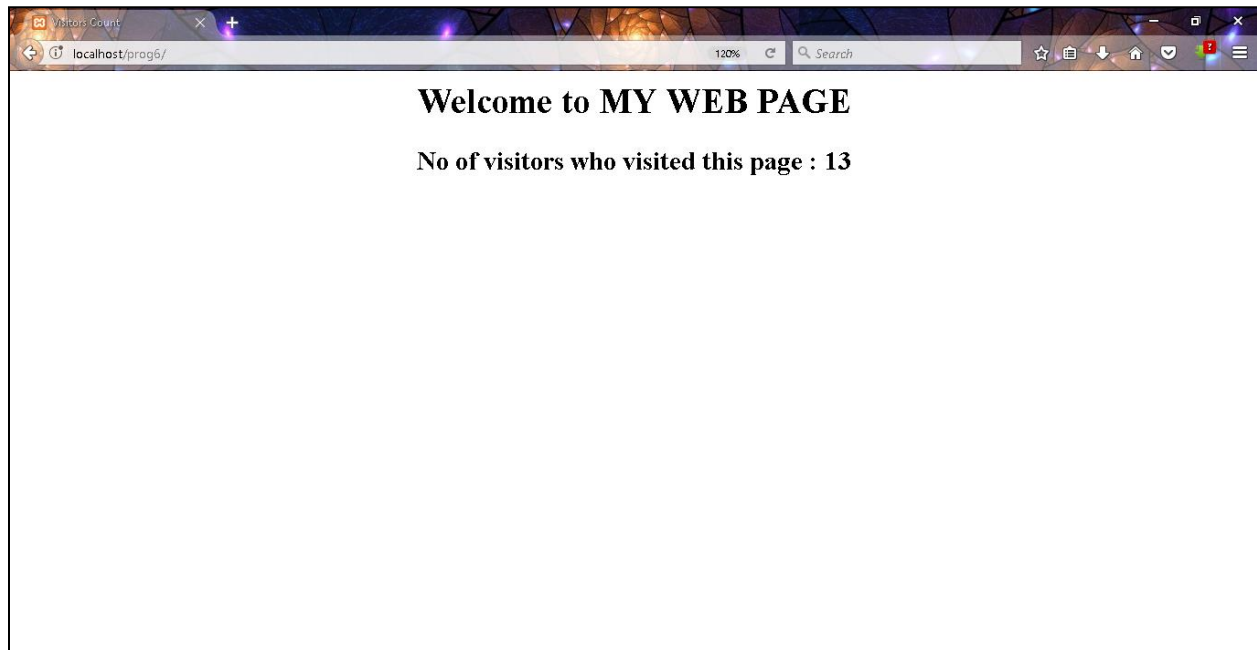
6. Write a PHP program to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.
index.php

```
<html>
<head>
    <title>Visitors Count</title>
    <style type="text/css">
        h1,h2 {text-align: center}
    </style>
</head>
<body>
    <h1>Welcome to MY WEB PAGE</h1>
    <?php
        $file="count.txt";
        $handle=fopen($file,'r') or die("Cannot Open File : $file");
        $count=fread($handle,10);
        fclose($handle);
        $count++;
        echo "<h2>No of visitors who visited this page : $count </h2>";
        $handle=fopen($file,'w') or die("Cannot Open File : $file");
        fwrite($handle,$count);
        fclose($handle);
    ?>
</body>
</html>
```

Instruction :

Create an empty file named count.txt in the same folder before executing.

Output :

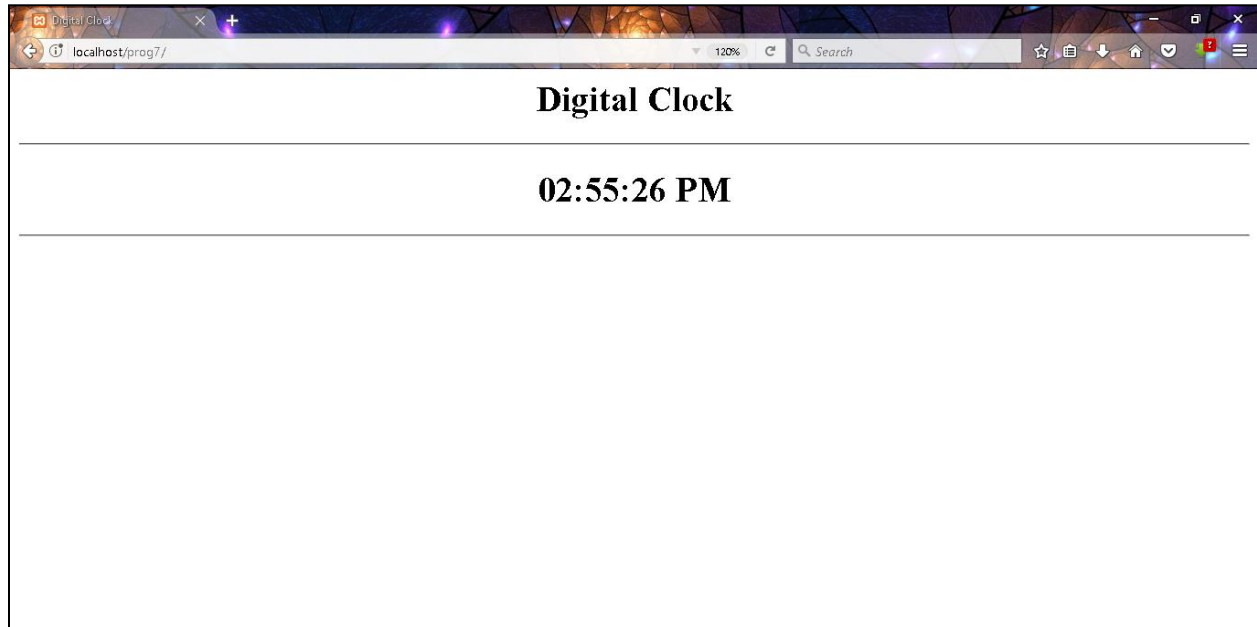


7. Write a PHP program to display a digital clock which displays the current time of the server.

index.php

```
<html>
<head>
    <meta http-equiv="refresh" content="1">
    <title>Digital Clock</title>
    <style type="text/css">
        h1 {text-align: center}
    </style>
</head>
<body>
    <?php
        echo "<h1>Digital Clock</h1>";
        echo "<hr/>";
        echo "<h1>".date('h:i:s A')."</h1>";
        echo "<hr/>";
    ?>
</body>
</html>
```

Output :



8. Write the PHP programs to do the following:

- a. Implement simple calculator operations.
- b. Find the transpose of a matrix.
- c. Multiplication of two matrices.
- d. Addition of two matrices.

8a.html

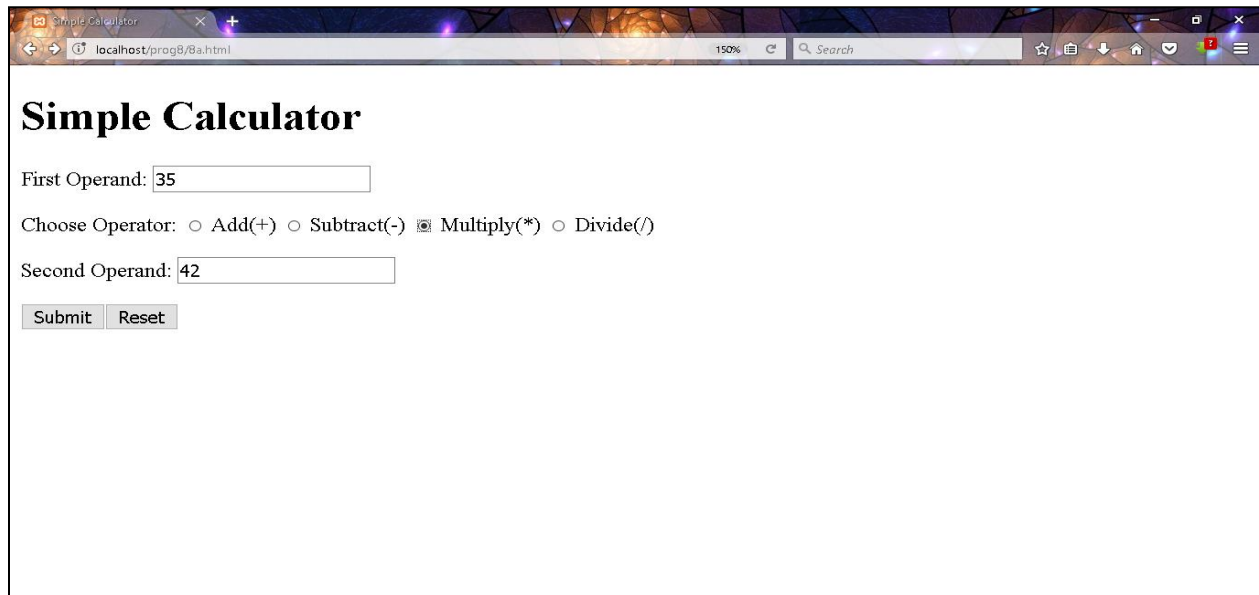
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Simple Calculator</title>
</head>
<body>
  <form action="8a.php" method="post">
    <h1>Simple Calculator</h1>
    <p>First Operand: <input type="text" name="op1" /></p>
    <p>Choose Operator:
      <input type="radio" name="operator" checked="checked" value="+" /> Add(+)
      <input type="radio" name="operator" value="-" /> Subtract(-)
      <input type="radio" name="operator" value="*" /> Multiply(*)
      <input type="radio" name="operator" value="/" /> Divide(/)
    </p>
    <p>Second Operand: <input type="text" name="op2"></p>
    <p><input type="submit" name="submit" value="Submit">
      <input type="reset" name="submit" value="Reset"></p>
  </form>
</body>
</html>
```

8a.php

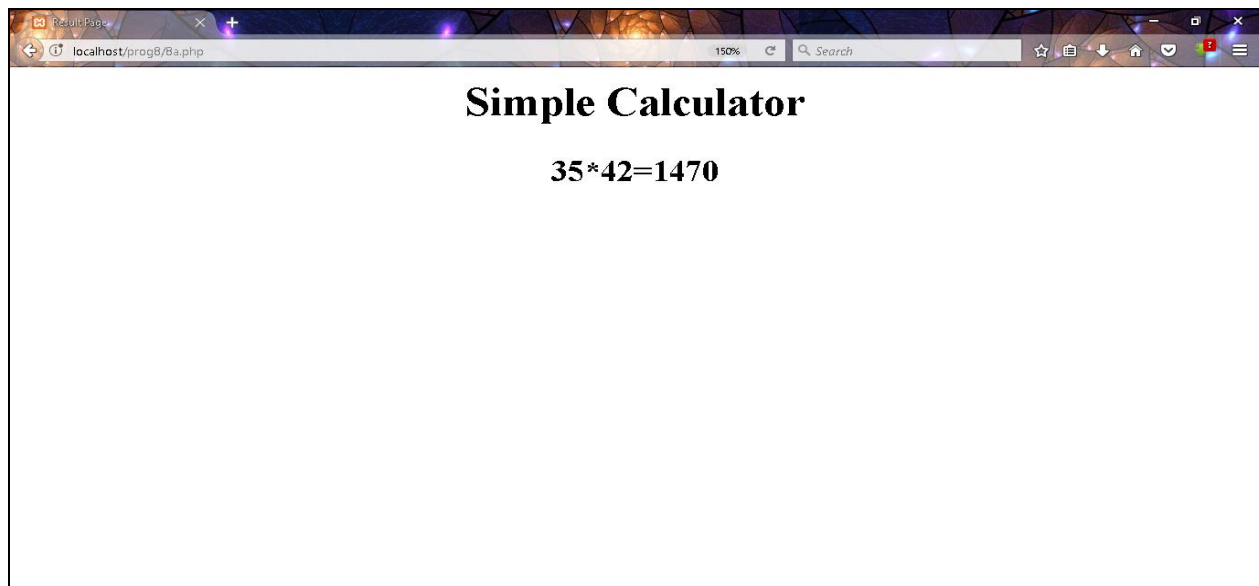
```
<html>
<head>
  <title>Result Page</title>
  <style type="text/css">
    h1,h2 {text-align: center;}
  </style>
</head>
<body>
  <?php
    $op1=$_POST['op1'];
    $op2=$_POST['op2'];
    $operator=$_POST['operator'];
    switch($operator)
    {
      case '+':$res=$op1+$op2;
        break;
      case '-':$res=$op1-$op2;
        break;
      case '*':$res=$op1*$op2;
        break;
      case '/':if($op2==0)
        $res=0;
```

```
        else
            $res=$op1/$op2;
            break;
    }
    echo "<h1>Simple Calculator</h1>";
    echo "<h2>". $op1. $operator. $op2. "=" . $res. "</h2>";
    ?>
</body>
```

Output :



(a) HTML input page



(b) PHP output/result page

8b.php

```
<?php
$mat=Array(Array(1,2),
            Array(4,5),
            Array(7,8)); //Initializing Array in PHP
$transpose=Array();      //Creating empty array in PHP

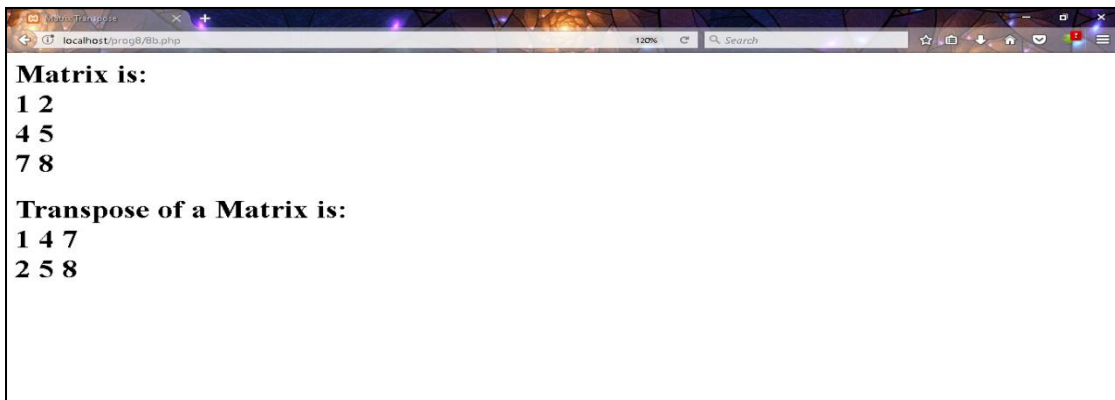
echo "<html><head><title>Matrix Transpose</title></head><body>";

echo "<h1>Matrix is:<br/>";
for($i = 0; $i < count($mat); $i++)
{
    for ($j = 0; $j < count($mat[0]); $j++)
    {
        echo $mat[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";

for($i = 0; $i < count($mat); $i++) //calculation for Transpose
    for($j = 0; $j < count($mat[0]); $j++)
    {
        $transpose[$j][$i]=$mat[$i][$j];
    }

echo "<h1>Transpose of a Matrix is:<br/>";
for($i = 0; $i < count($transpose); $i++)
{
    for ($j = 0; $j < count($transpose[0]); $j++)
    {
        echo $transpose[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";
echo "</body></html>";
?>
```

Output :



8c.php

```

<?php
$mat1=Array(Array(1,2) ,
    Array(3,4) ,
    Array(5,6));          //initializing 2 x 3 matrix

$mat2=Array(Array(2,4,8) ,      //initializing 3 x 2 matrix
    Array(1,3,5));

echo "<html><head><title>Matrix Multiplication</title></head><body>";

if(count($mat1[0])!=count($mat2))      //column(1st matrix) != row(2nd matrix)
{
    echo "<h1>Incompatible Matrices</h1>";
    exit(0);
}

$res=array();

echo "<h1>Matrix A:<br/>";
for($i = 0; $i < count($mat1); $i++)
{
    for ($j = 0; $j < count($mat1[0]); $j++)
    {
        echo $mat1[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";

echo "<h1>Matrix B:<br/>";
for($i = 0; $i < count($mat2); $i++)
{
    for ($j = 0; $j < count($mat2[0]); $j++)
    {
        echo $mat2[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";

for($i = 0; $i < count($mat1); $i++)
    for($j = 0; $j < count($mat2[0]); $j++)
    {
        $res[$i][$j]=0;
        for($k=0;$k<count($mat2);$k++)
            $res[$i][$j]=$res[$i][$j]+$mat1[$i][$k]*$mat2[$k][$j];
    }

echo "<h1>A x B:<br/>";
for($i = 0; $i < count($res); $i++)
{
    for ($j = 0; $j < count($res); $j++)
    {
        echo $res[$i][$j] . " ";
    }
    echo "<br/>";
}

```

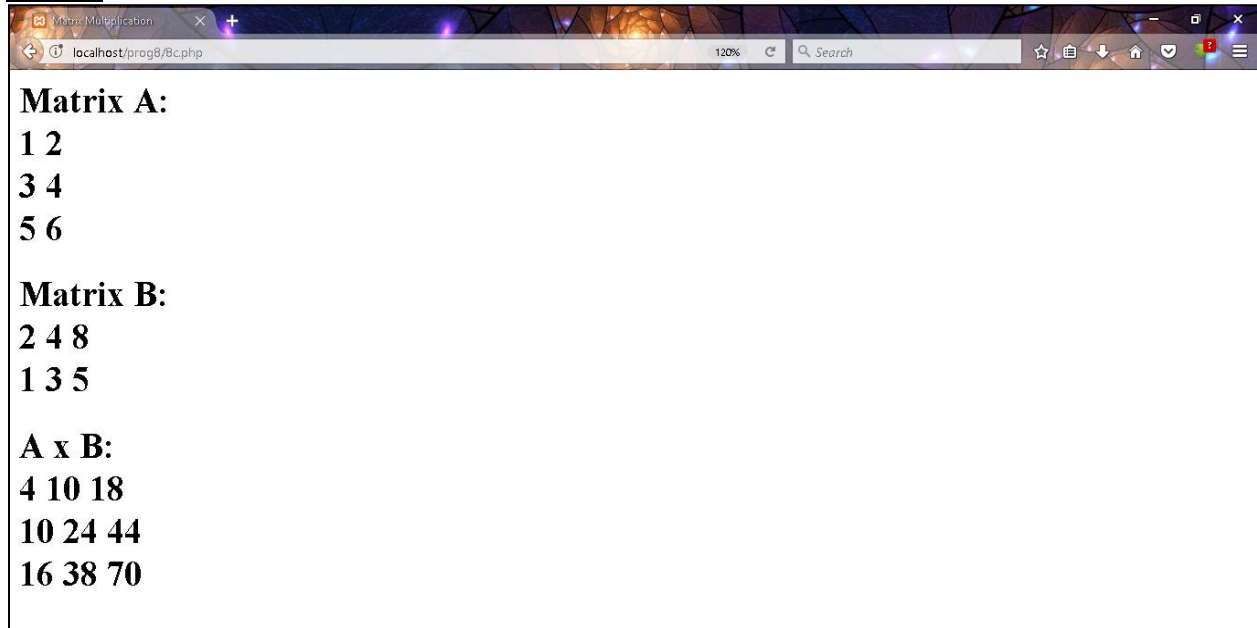


```

}
echo "</h1>";
echo "</body></html>";

```

Output :



8d.php

```

<?php
$mat1=Array(Array(1,2) ,
             Array(3,4) ,
             Array(5,6));

$mat2=Array(Array(1,1) ,
             Array(2,2) ,
             Array(3,3));

echo "<html><head><title>Matrix Addition</title></head><body>";

if((count($mat1)!=count($mat2)) || (count($mat1[0])!=count($mat2[0])))
{
    echo "<h1>Incompatible Matrices</h1>";
    exit(0);
}
echo "<h1>Matrix A:<br/>";
for($i=0;$i<count($mat1);$i++)
{
    for ($j = 0; $j < count($mat1[0]); $j++)
    {
        echo $mat1[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";

```

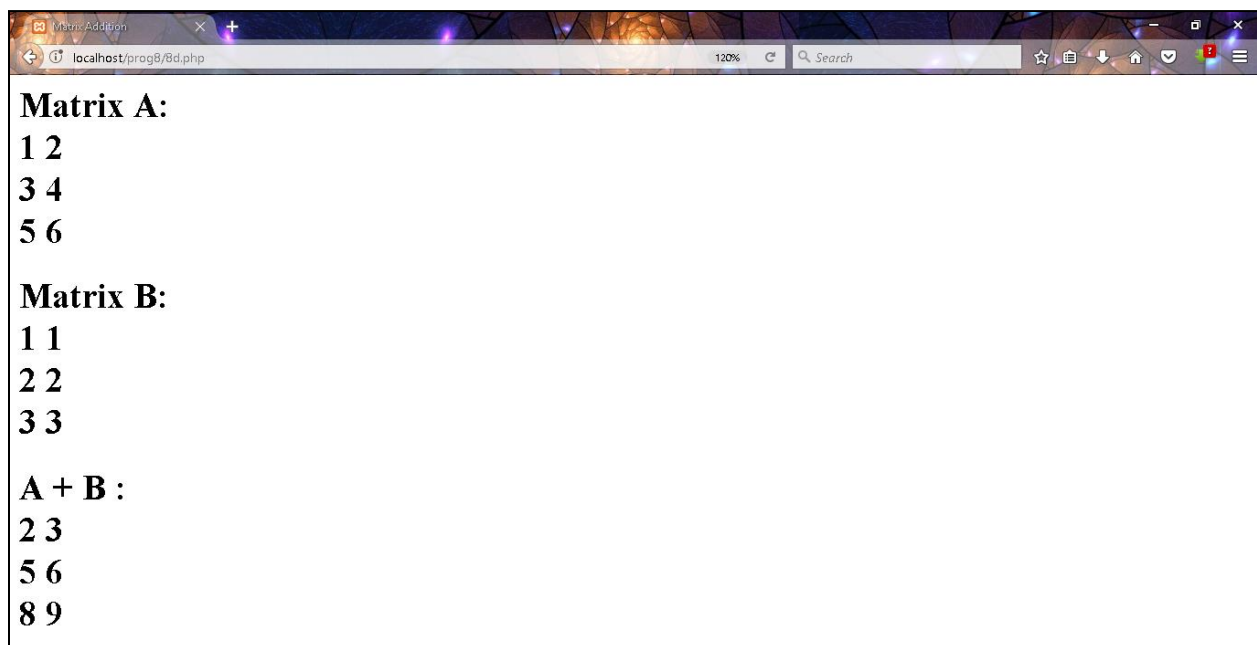
```
echo "<h1>Matrix B:<br/>";
for($i = 0; $i < count($mat2); $i++)
{
    for ($j = 0; $j < count($mat2[0]); $j++)
    {
        echo $mat2[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";

$res=array();

for($i = 0; $i < count($mat1); $i++)
    for($j = 0; $j < count($mat1[0]); $j++)
    {
        $res[$i][$j]=$mat1[$i][$j]+$mat2[$i][$j];
    }

echo "<h1>A + B :<br/>";
for($i = 0; $i < count($res); $i++)
{
    for ($j = 0; $j < count($res[0]); $j++)
    {
        echo $res[$i][$j] . " ";
    }
    echo "<br/>";
}
echo "</h1>";
```

Output :



9. Write a PHP program named `states.py` that declares a variable `states` with value "Mississippi Alabama Texas Massachusetts Kansas". write a PHP program that does the following:

- a) Search for a word in variable `states` that ends in `xas`. Store this word in element 0 of a list named `statesList`.
- b) Search for a word in `states` that begins with `k` and ends in `s`. Perform a case-insensitive comparison. [Note: Passing `re.I` as a second parameter to method `compile` performs a case-insensitive comparison.] Store this word in element 1 of `statesList`.
- c) Search for a word in `states` that begins with `M` and ends in `s`. Store this word in element 2 of the list.
- d) Search for a word in `states` that ends in `a`. Store this word in element 3 of the list.

index.php

```
<html>
<head>
    <title>Pattern Matching using python</title>
</head>
<body>
    <?php
        $res=shell_exec("python PythonServer/states.py");
        $states=explode("\n",$res);          //in python print embed \n at the end
        echo "Statement is : <b>$states[4]</b><br/>";
        echo "Word that end with xas : <b>$states[0]</b><br/>";
        echo "Word that Starts with k and end with s (Case Insensitive):
    <b>$states[1]</b><br/>";
        echo "Word that Starts with M and end with s : <b>$states[2]</b><br/>";
        echo "Word that end with a : <b>$states[3]</b>";
    ?>
</body>
</html>
```

States.py

```
import re
states="Mississippi Alabama Texas Massachusetts Kansas"
statesArr=states.split()          # splits the sentence into words
statesList=list()                 # Creates an empty List
for val in statesArr:
    if(re.search('xas$',val)):      #note: Indentation is imp in python
        statesList.append(val)

for val in statesArr:
    if(re.search('^k.*s$',val,re.I)):
        statesList.append(val)

for val in statesArr:
    if(re.search('^M.*s$',val)):
        statesList.append(val)

for val in statesArr:
    if(re.search('a$',val)):
        statesList.append(val)
```

```
for val in statesList:
    print(val)

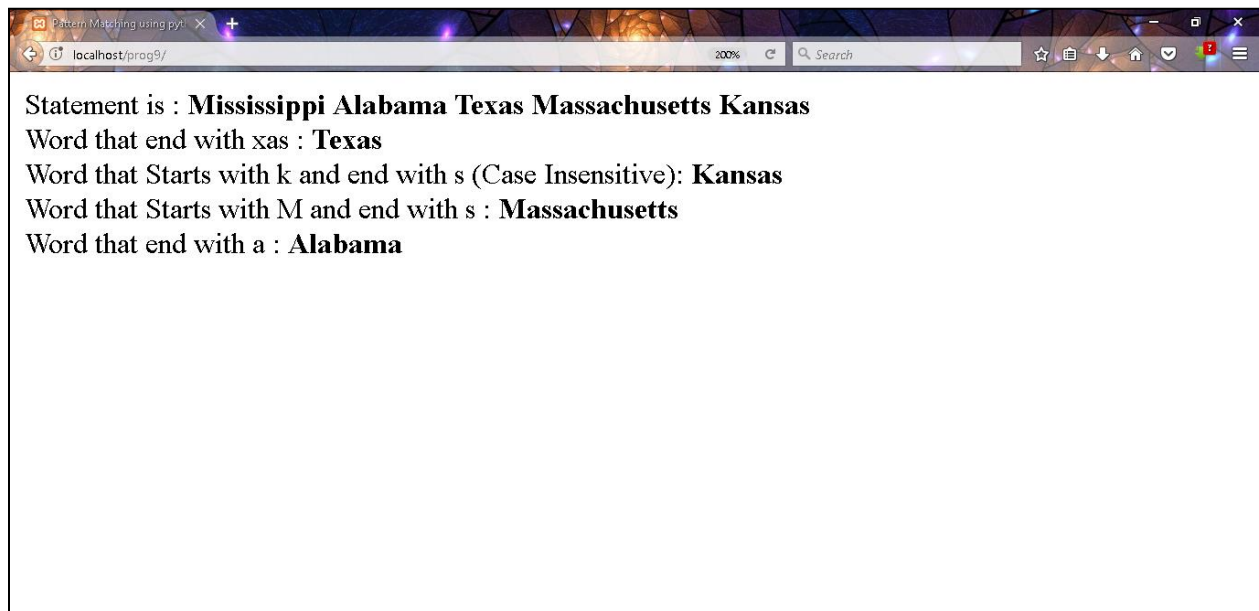
print(states);
```

Instruction :

Install Python in terminal / command prompt.

Create a folder named "PythonServer" in the same directory where "index.php" has been located. And then place the "states.py" file inside "PythonServer" folder.

This is to assume that "state.py" has been fetched from some python server, which has been located somewhere on the internet.

Output :

10. Write a PHP program to sort the student records which are stored in the database using selection sort.

index.php

```
<html>
<head>
    <title>Select Sort on student records</title>
    <style type="text/css">
        h1 {text-align: center;}
    </style>
</head>
<body>
    <h1>Merge Sort on sample student data</h1>

    <form action="" method="post">
        <h1>Sort By :
            <select name="field">
                <option value="" disabled selected>Choose Field</option>
                <option value="name">Name</option>
                <option value="usn">USN</option>
                <option value="year">Year</option>
                <option value="marks">Marks</option>
                <option value="coll">College</option>
            </select>
        </h1>
        <h1>
            <input type="submit" name="submit" value="Submit">
            <input type="reset" name="reset" value="Reset">
        </h1>
    </form>

    <?php
    function selection_sort($data,$keys)
    {
        for($i=0; $i<count($data)-1; $i++)
        {
            $min = $i;
            for($j=$i+1; $j<count($data); $j++)
            {
                if ($data[$j]<$data[$min])
                {
                    $min = $j;
                }
            }
            $data = swap_positions($data, $i, $min);
            $keys = swap_positions($keys, $i, $min);
        }
        return $keys;
    }

    function swap_positions($data1, $left, $right)
    {
        $temp = $data1[$right];
        $data1[$right] = $data1[$left];
        $data1[$left] = $temp;
        return $data1;
    }
```

```

include 'sql.php';
$str="select * from studentdetails";
$res=mysqli_query($sql,$str);
$field="none";
$myarr=[];
$original=[];
$i=1;
while($arr=mysqli_fetch_assoc($res))
{
    $myarr[]=$arr;
}
if(isset($_POST['submit']) && isset($_POST['field']))
{
    $field=$_POST['field'];
    $original=array_column($myarr,$field,'id');
    // Create Associate array with (key,value)=('id',$field)
    $originalKey=array_keys($original);
    $originalVal=array_values($original);
    $sortedkeys=selection_sort($originalVal,$originalKey);
    $myarr=[];
    foreach ($sortedkeys as $key)
    {
        $str="select * from studentdetails WHERE id='$key'";
        $res=mysqli_query($sql,$str);
        $myarr[]=mysqli_fetch_assoc($res);
    }
}
?>
<table border="1" width="80%" align="center">
<tr>
<th colspan="6">
    Student Details [Sorted by: <?php echo $field;?>]
</th>
</tr>
<tr>
<th>No</th>
<th>Name</th>
<th>USN</th>
<th>Year</th>
<th>Marks</th>
<th>College</th>
</tr>
<?php foreach ($myarr as $arr): ?>
<tr>
<td><?php echo $i++; ?></td>
<td><?php echo $arr['name']; ?></td>
<td><?php echo $arr['usn']; ?></td>
<td><?php echo $arr['year']; ?></td>
<td><?php echo $arr['marks']; ?></td>
<td><?php echo $arr['coll']; ?></td>
</tr>
<?php endforeach; ?>
</table>
</body>
</html>

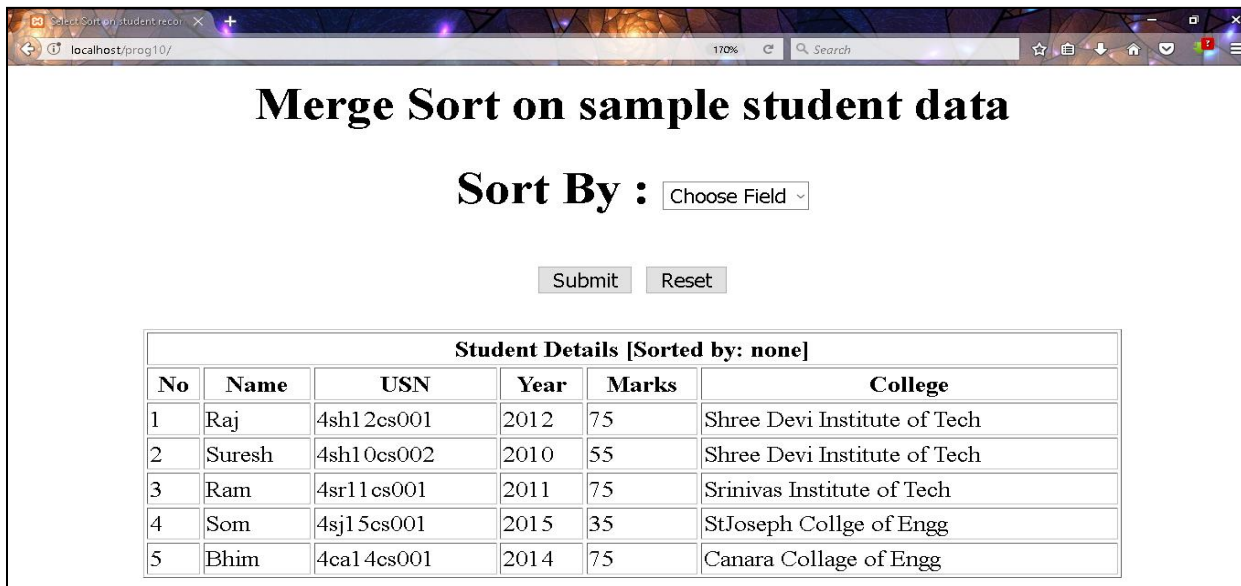
```

sql.php

```
<?php
$sql=mysqli_connect("localhost","root","","prog10db");
?>
```

Database Procedure :

1. Creating Database :
`CREATE DATABASE prog10db;`
2. Creating table :
`CREATE TABLE studentdetails (
 id int AUTO_INCREMENT,
 name varchar(100),
 usn varchar(50),
 year int,
 marks int,
 coll varchar(200),
 PRIMARY KEY (id)
);`
3. Insert 5 sample data into table :
`INSERT INTO studentdetails VALUES
(0,'Raj','4sh12cs001',2012,75,'Shree Devi Institute of Tech'),
(0,'Suresh','4sh10cs002',2010,55,'Shree Devi Institute of Tech'),
(0,'Ram','4sr11cs001',2011,75,'Srinivas Institute of Tech'),
(0,'Som','4sj15cs001',2015,35,'StJoseph Collge of Engg'),
(0,'Bhim','4ca14cs001',2014,75,'Canara Collage of Engg');`

Output :


Merge Sort on sample student data

Sort By : Choose Field ▾

Submit Reset

Student Details [Sorted by: none]					
No	Name	USN	Year	Marks	College
1	Raj	4sh12cs001	2012	75	Shree Devi Institute of Tech
2	Suresh	4sh10cs002	2010	55	Shree Devi Institute of Tech
3	Ram	4sr11cs001	2011	75	Srinivas Institute of Tech
4	Som	4sj15cs001	2015	35	StJoseph Collge of Engg
5	Bhim	4ca14cs001	2014	75	Canara Collage of Engg

(a) Without applying any sort

Merge Sort on sample student data

Sort By :

Student Details [Sorted by: usn]					
No	Name	USN	Year	Marks	College
1	Bhim	4ca14cs001	2014	75	Canara Collage of Engg
2	Suresh	4sh10cs002	2010	55	Shree Devi Institute of Tech
3	Raj	4sh12cs001	2012	75	Shree Devi Institute of Tech
4	Som	4sj15cs001	2015	35	StJoseph Collge of Engg
5	Ram	4sr11cs001	2011	75	Srinivas Institute of Tech

(b) Sorting the data based on USN

Merge Sort on sample student data

Sort By :

Student Details [Sorted by: marks]					
No	Name	USN	Year	Marks	College
1	Som	4sj15cs001	2015	35	StJoseph Collge of Engg
2	Suresh	4sh10cs002	2010	55	Shree Devi Institute of Tech
3	Ram	4sr11cs001	2011	75	Srinivas Institute of Tech
4	Raj	4sh12cs001	2012	75	Shree Devi Institute of Tech
5	Bhim	4ca14cs001	2014	75	Canara Collage of Engg

(c) Sorting the data based on MARKS